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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SUNG-HO CHO et al.

Serial No.: 10/726,552

Examiner: CIRIC, LJILJANA V.

Filed: 4 December 2003

Art Unit: 3753

For: REFRIGERATOR AND CONTROL METHOD THEREOF

**REQUEST FOR REFUND**

**Mail Stop : 16**

**Attn: Refunds**

Director of the U.S. Patent & Trademark Office  
2051 Jamieson Ave, Suite 300  
Alexandria, VA 22314

Sir:

Applicant respectfully request for refund of extra claim fee \$100.00 under fee code [1202]

overcharged on 8 March 2006 in the above-referenced application for the reason as follows:

1. On 4 December 2003, Applicants filed a patent application setting forth claims 1-30, together with a Preliminary Amendment where claims 17-30 were cancelled. Accordingly, claims 1-16 were pending by entry of the Preliminary Amendment.
2. On 22 September 2005, a first Office action (Paper No. 09192005) was mailed.
3. On 21 December 2005, Applicant timely filed an Amendment, in reply to Paper No. 09192005. Applicants added new claims 31-36 and properly paid \$100.00 (Check

No. 50087) for extra claim fee (22 - 20 = 2 extra x \$50.00 = \$100.00). Claims 1-16 and 31-36 were pending in the Amendment. The number of total claims was 22 and the number of independent claims was 3 in the Amendment. Enclosed is a copy of front and back of Check No. 50087, which was cashed by the U.S. Patent & Trademark Office.

4. On 2 March 2006, a Notice of Non-compliant Amendment (37 C.F.R. §1.121) (Paper No. 02282006) was mailed. In the Notice, the Examiner stated that the amendment to the abstract in the Amendment filed on 21 December 2005 did not properly show changes made relative to the immediately previous version of the abstract, namely the version of the abstract as amended via the Preliminary Amendment filed on 4 December 2003.
5. On 7 March 2006, Applicant filed a Corrected Amendment, in reply to the Notice to Non-Compliant Amendment (37 C.F.R. §1.121) (Paper No. 02282006). This Corrected Amendment was filed to correct an error in the abstract in response to the Notice of Non-compliant Amendment (Paper No. 02282006). Please note that "amendments to the claims" section of the Corrected Amendment was same as that of Amendment previously filed on 21 December 2005. Claims 1-16 and 31-36 were pending in the Corrected Amendment. The number of total claims was 22 and the number of independent claims was 3. In view of the fact that the extra claim fee of

\$100.00 has been previously paid on 21 December 2005, no fee was incurred by filing the Corrected Amendment on 7 March 2006.

6. On 8 March 2006, the amount of \$100.00 under fee code [1202] was charged to the Applicant's undersigned Attorney's Deposit Account No. 02-4943.

**REMARKS**

In view of the fact that Applicant has properly paid extra claim fee of \$100.00 on 21 December 2005, the amount of \$100.00 under fee code [1202] was overcharged on 8 March 2006, and the amount \$100.00 should be refunded.

Accordingly, the Commissioner is respectfully requested to immediately refund the amount of \$100.00 under fee code [1202] **overcharged on 8 March 2006** to Applicant's undersigned attorney's Deposit Account No. 02-4943.

**Please refer the attached documents for the above-reference patent application.**

Respectfully submitted,



Robert E. Bushnell  
Attorney for Applicant  
Reg. No.: 27,774

1522 "K" Street, N.W., Suite 300  
Washington, D.C. 20005  
(202) 408-9040

Folio: P56993

Date: 13 July 2006

I.D.: REB/sb

- Enclosures:
1. Copies of Amendment, Fee transmittal and front and back of check #50087, filed on 21 December 2005
  2. A copy of date-stamped postcard receipt dated 21 December 2005
  3. A copy of Notice of Non-Compliant Amendment (37 C.F.R. §1.121) (Paper No. 02282006) mailed on 2 March 2006
  4. A copy of Corrected Amendment filed on 7 March 2006
  5. A copy of date-stamped postcard receipt dated 7 March 2006
  6. A copy of Monthly Statement of Deposit Account dated 3/31/06



PATENT  
P56993

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

SUNG-HO CHO *et al.*

Serial No.: 10/726,552

Examiner: CIRIC, LJILJANA V

Filed: December 4, 2003

Art Unit: 3753

For: REFRIGERATOR AND CONTROL METHOD THEREOF

**CORRECTED AMENDMENT**

**Mail Stop: Amendment**  
Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Non-Compliant Amendment mailed on 2 March 2006  
(Paper No. 02282006), entry of the following amendments and/or remarks, re-examination  
and reconsideration, are respectfully requested.

Adjustment date: 07/26/2006 SDIRETA1  
03/08/2006 SZEWDIE1 00000106 024943 10726552  
01 FC:1202 100.00 CR

03/08/2006 SZEWDIE1 00000106 024943 10726552  
01 FC:1202 100.00 DA

Folio: P56993  
Date: 3/7/06  
I.D.: REB/JHP/ny/fw



## UNITED STATES PATENT AND TRADEMARK OFFICE



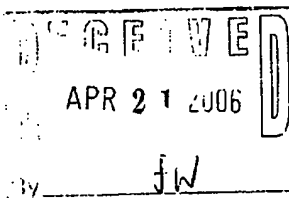
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ROBERT E BUSHNELL ESQ  
ROBERT E. BUSHNELL  
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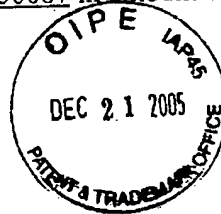
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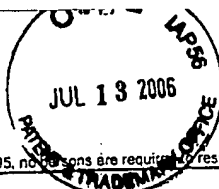
21 December 2005

Applicant: SUNG-HO CHO *et al.*  
Serial No.: 10/726,552  
Filed: 4 December 2003  
For: REFRIGERATOR AND CONTROL METHOD THEREOF

Document filed:

- ☒ Amendment in response to the first Office action mailed on 22 September 2005 (Paper No. 09192005)
- ☒ Fee transmittal w/check #50087 in amount of \$100.00





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FEE TRANSMITTAL Patent fees are subject to annual revision. <b>COPY</b>		Complete If Known	
		Application Number	10/726,552
		Filing Date	4 December 2003
		First Named Inventor	SUNG-HO CHO
		Examiner Name	CIRIC, LJLJANA V
		Group/Art Unit	3753
TOTAL AMOUNT OF PAYMENT (\$) <b>100.00</b>		Attorney Docket No.	P56993
METHOD OF PAYMENT (check one)		FEE CALCULATION	
1. <input checked="" type="checkbox"/> Payment Enclosed: (CHECK #50087) <input type="checkbox"/> Check <input type="checkbox"/> Credit Card <input type="checkbox"/> Money Order <input type="checkbox"/> Other		Fee Fee Fee Fee Fee Code (\$) Code (\$) Code (\$) Code (\$) Code (\$) Fee Description Fee Paid	
<input type="checkbox"/> Charge Any Additional Fee Required Under 37 C.F.R. §1.16 and 1.17.		MISCELLANEOUS	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		1801 \$790 2801 \$395 Request for continued examination (RCE) \$	
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CLAIMS		1462 \$400 Petitions to Director (Group I) \$	
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*Robert E. Bushnell*  
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PATENT  
P56993

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SUNG-HO CHO *et al.*

COPY

Serial No.: 10/726,552

Examiner: CIRIC, LJILJANA V

Filed: December 4, 2003

Art Unit: 3753

For: REFRIGERATOR AND CONTROL METHOD THEREOF

AMENDMENT

**Mail Stop: Amendment**  
Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the first Office action mailed on 22 September 2005 (Paper No. 09192005), entry of the following amendments and remarks, re-examination and reconsideration are respectfully requested.

Folio: P56993  
Date: 12/21/05  
I.D.: REB/JHP/ny

AMENDMENT IN THE ABSTRACT

Please amend the Abstract as follows:

~~Disclosed is a~~ A refrigerator ~~comprising~~has at least one chamber, ~~[[and]]~~ a temperature adjuster adjusting an temperature inside the chamber, ~~further comprising~~ a first temperature sensor approximately sensing the temperature inside the chamber, a second temperature sensor spaced from the first temperature sensor so as to sense the real temperature inside the chamber~~[[;]]~~, and a controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within predetermined temperature limits of the chamber and the temperature sensed by the second temperature sensor is not. With this configuration, the temperature inside the chamber is effectively controlled by an accurate and prompt sensing operation. Though one of the first and second temperature sensors is abnormal, it is possible to replace or repair the abnormal temperature sensor, or to control the temperature adjuster by the other normal temperature sensor.

AMENDMENT IN THE CLAIMS

Please amend claim 1 and add claims 31 thru 36 to read as follows.

1           1. (Currently Amended) A refrigerator comprising:  
2           at least one chamber;  
3           a first temperature sensor arranged to sense ~~sensing~~ a temperature of the chamber;  
4           a second temperature sensor spaced from the first temperature sensor to sense an inner  
5           temperature of the chamber;  
6           a temperature adjuster adjusting the inner temperature of the chamber; and  
7           a controller controlling the temperature adjuster according to the temperature sensed  
8           by the second temperature sensor when the temperature sensed by the first temperature  
9           sensor is within a predetermined temperature range of the chamber and the temperature  
10          sensed by the second temperature sensor is not within the predetermined temperature range  
11          of the chamber.

1           2. (Previously Presented) The refrigerator according to claim 1, wherein the first and  
2           second temperature sensors are installed at lower and upper parts of the chamber,  
3           respectively; and  
4           the controller is programmed with said predetermined temperature range, said  
5           predetermined temperature range comprising a first temperature range and a second  
6           temperature range to be compared with the temperatures sensed by the first and second

7 temperature sensors, respectively.

1 3. (Original) The refrigerator according to claim 1, wherein one of the first and  
2 second temperature sensors is removably installed.

1 4. (Original) The refrigerator according to claim 2, wherein one of the first and  
2 second temperature sensors is removably installed.

1 5. (Original) The refrigerator according to claim 3, wherein the first temperature  
2 sensor is in contact with the bottom surface of the chamber and senses the temperature of the  
3 surface of the chamber; and  
4 the second temperature sensor is installed at the upper part of the chamber and senses  
5 the inner temperature of the chamber.

1 6. (Previously Presented) The refrigerator according to claim 5, further comprising  
2 a sensor accommodating part accommodating the second temperature sensor, and a sensor  
3 cover opening and closing the sensor accommodating part.

1 7. (Previously Presented) The refrigerator according to claim 2, wherein the first and  
2 second temperature ranges are different from each other.

1           8. (Previously Presented) The refrigerator according to claim 7, wherein the  
2     controller determines whether the temperature sensed by the first temperature sensor is  
3     within the first temperature range, if the temperature sensed by the second temperature  
4     sensor is within the second temperature range, to thereby control the temperature adjuster.

1           9. (Previously Presented) The refrigerator according to claim 8, wherein the  
2     controller controls the temperature adjuster to allow the temperature sensed by the second  
3     temperature sensor to be within the second temperature range if the temperature sensed by  
4     the second temperature sensor is not within the second temperature range, and determines  
5     whether or not the temperature sensed by the first temperature sensor is within the first  
6     temperature range, if the temperature sensed by the second temperature sensor is within the  
7     second temperature range, to thereby control the temperature adjuster.

1           10.(Previously Presented) The refrigerator according to claim 7, wherein the  
2     controller controls the temperature adjuster until the temperature sensed by the second  
3     temperature sensor is within the second temperature range, and then determines whether or  
4     not the temperature sensed by the first temperature sensor is within the first temperature  
5     range, to thereby control the temperature adjuster.

1           11.(Previously Presented) The refrigerator according to claim 10, wherein the  
2     controller controls the temperature adjuster to allow the temperature sensed by the second

3 temperature sensor to be within the second temperature range, if the temperature sensed by  
4 the second temperature sensor is not within the second temperature range, and determines  
5 whether or not the temperature sensed by the first temperature sensor is within the first  
6 temperature range, if the temperature sensed by the second temperature sensor is within the  
7 second temperature range, to thereby control the temperature adjuster.

1 12.(Previously Presented) The refrigerator according to claim 10, wherein the  
2 controller controls the temperature adjuster until the temperature sensed by the second  
3 temperature sensor is within the second temperature range, and then determines whether or  
4 not the temperature sensed by the first temperature sensor is within the first temperature  
5 range, to thereby control the temperature adjuster.

1 13. (Original) The refrigerator according to claim 6, further comprising first and  
2 second sensor indicators indicating operating states of the first and second temperature  
3 sensors; and  
4 wherein the controller controls the operating states of the first and second temperature  
5 sensors.

1 14.(Previously Presented) The refrigerator according to claim 13, wherein where one  
2 of the first and second temperature sensors is determined to be abnormal and the other of the  
3 first and second temperature sensors is determined to be normal, the controller allows the

4 sensor indicator corresponding to the abnormal sensor to indicate abnormality and  
5 determines whether or not the temperature sensed by the normal temperature sensor is within  
6 the temperature range of the normal temperature sensor, to thereby control the temperature  
7 adjuster.

1 15. (Original) The refrigerator according to claim 10, wherein where both the first  
2 and second temperature sensors are out of order, the controller allows both the first and  
3 second sensor indicators to indicate the abnormalities of both the first and second  
4 temperature sensors, and suspends the operation of the temperature adjuster.

1 16. (Original) The refrigerator according to claim 1, wherein the temperature adjuster  
2 comprises:

3 a cooling system cooling the chamber with a compressor, a condenser, an evaporator  
4 and a valve which circulate a refrigerant; and  
5 a heater heating the chamber.

1 17-30. (Canceled)

1 31. (New) A refrigerator comprising:

2 at least one chamber;

3 a first temperature sensor being in contact with the bottom surface of the chamber to



4 sense the temperature of the surface of the chamber;

5 a second temperature sensor spaced from the first temperature sensor to sense an inner  
6 temperature of the chamber;

7 a temperature adjuster adjusting the inner temperature of the chamber; and

8 a controller controlling the temperature adjuster according to the temperature sensed  
9 by the second temperature sensor when the temperature sensed by the first temperature  
10 sensor is within a predetermined temperature range of the chamber and the temperature  
11 sensed by the second temperature sensor is not within the predetermined temperature range  
12 of the chamber.

1 32. (New) The refrigerator according to claim 31, further comprising a sensor  
2 accommodating part accommodating the second temperature sensor, and a sensor cover  
3 opening and closing the sensor accommodating part.

1 33. (New) A refrigerator comprising:  
2 at least one chamber;  
3 a first temperature sensor arranged to sense a temperature of a surface of the chamber;  
4 a second temperature sensor spaced from the first temperature sensor to sense an inner  
5 temperature of the chamber;  
6 a temperature adjuster adjusting the inner temperature of the chamber; and  
7 a controller being programmed with a first predetermined temperature range and a

8 second predetermined temperature range, the controller controlling the temperature adjuster  
9 based on a determination of whether the temperature sensed by the first temperature sensor  
10 is within said first predetermined temperature range and whether the temperature sensed by  
11 the second temperature sensor is within said second predetermined temperature range.

1 34. (New) The refrigerator according to claim 33, wherein the controller controls said  
2 temperature adjuster based on the temperature sensed by the second temperature sensor until  
3 the temperature sensed by the second temperature sensor is within said second predetermined  
4 temperature range, and, once said temperature sensed by the second temperature sensor is  
5 within said second predetermined temperature range, the controller controls said temperature  
6 adjuster based on said temperature sensed by the first temperature sensor until said  
7 temperature sensed by the first temperature sensor is within said first predetermined  
8 temperature range.

1 35. (New) The refrigerator according to claim 33, wherein the temperature adjuster  
2 comprises a cooling system to cool the chamber and a heater to heat the chamber, and  
3 if the temperature sensed by the second temperature sensor is not within said second  
4 predetermined temperature range, the controller turns off said cooler and turns on said heater  
5 when the temperature sensed by the second temperature sensor is lower than said second  
6 predetermined temperature range, and turns on said cooler and turns off said heater when the  
7 temperature sensed by the second temperature sensor is higher than said second

8 predetermined temperature range, and if the temperature sensed by the second temperature  
9 sensor is within said second predetermined temperature range, the controller turns off said  
10 cooler and turns on said heater when the temperature sensed by the first temperature sensor  
11 is lower than said first predetermined temperature range, and turns on said cooler and turns  
12 off said heater when the temperature sensed by the first temperature sensor is higher than  
13 said first predetermined temperature range.

1 36. (New) The refrigerator according to claim 35, further comprising a sensor  
2 accommodating part accommodating the second temperature sensor, and a sensor cover  
3 opening and closing the sensor accommodating part.

**REMARKS**

This amendment is in response to the first Office action mailed on 22 September 2005 (Paper No. 09192005).

In response to the examiner's objection to the abstract, the abstract has been corrected. Withdrawal of the objection is respectfully requested.

Claims 1 through 16 are pending in this application. Claim 1 has been amended, and claims 31 through 36 are newly added. No new matter has been added.

**I. Claim Rejection - 35 U.S.C. §112**

(1) Claims 1 through 16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner argued that it is not clear whether the corresponding functional language limitations in base claim 1 (i.e., "sensing a temperature of the chamber" in lines 4-5 of the claim; "controlling the temperature adjuster according to..." in lines 9-12 of the claim) are intended to merely recite the intended use of the first temperature sensor and of the controller or whether these are intended to recite method steps in an apparatus claim or whether these are intended to invoke 35 U.S.C. 112, sixth paragraph without using means-

plus-function language, for example, thus rendering indefinite the metes and bounds of protection sought by base claim 1 and all claims depending therefrom.

The examiner's rejection is not proper for the following reasons.

First, claims 1 through 16 are directed neither to "intended use" nor "method steps in an apparatus claim."

MPEP 2173.05(g) states that:

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. **Functional language does not, in and of itself, render a claim improper.** *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. **A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.** (Emphasis added.)

The law clearly permits the applicant to define an element by what it does. Also, the law clearly permits a functional limitation to be used in association with an element to define a particular capability or purpose that is served by the recited element.

In view of the above holdings, there is no improper functional limitation in claim 1. Furthermore, "sensing a temperature of the chamber" in claim 1 has been amended to

"arranged to sense a temperature of the chamber."

Second, the languages in claims 1 through 16 do not invoke 35 U.S.C. 112, sixth paragraph.

MPEP §2181 states that:

A claim limitation will be interpreted to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis:

- (A) the claim limitations must use the phrase "means for" or "step for";
- (B) the "means for" or "step for" must be modified by functional language; and
- (C) the phrase "means for" or "step for" must not be modified by sufficient structure, material or acts for achieving the specified function.

With respect to the first prong of this analysis, a claim element that does not include the phrase "means for" or "step for" will not be considered to invoke 35 U.S.C. 112, sixth paragraph.

Here, since claim 1 properly defines the first temperature sensor and the controller by what they do, and claim 1 does not include the phrase "means for" or "step for," the claim limitations should not be interpreted to invoke 35 U.S.C. 112, sixth paragraph.

Therefore, claims 1 through 16 are not amiss under 35 U.S.C. 112, second paragraph.

(2) Claims 1 through 16 stand rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such

omission amounting to a gap between the necessary structural connections.

The examiner argued that the omitted structural cooperative relationships are, for example: the ones between the at least one chamber and each of the first and second temperature sensors; the ones between the temperature adjuster, the at least one chamber, and the controller; and, the ones between the controller and each of the first sensor and the second sensor.

In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004), the court noted that the claim term "operatively connected" is "a general descriptive claim term frequently used in patent drafting to reflect a functional relationship between claimed components," that is, the term "means the claimed components must be connected in a way to perform a designated function." "In the absence of modifiers, general descriptive terms are typically construed as having their full meaning." *Id.* at 1118, 72 USPQ2d at 1006. In the patent claim at issue, "subject to any clear and unmistakable disavowal of claim scope, the term 'operatively connected' takes the full breath of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." *Id.* at 1120, 72 USPQ2d at 1008.

The necessary cooperation need not be a "direct mechanical interaction"; the elements can function independently "so long as the overall result is patentable." See *In re Gustafson*, 331 F.2d 905, 141 USPQ 585 (CCPA 1964); *Ancol Co. V. Uniroyal, Inc.*, 448 F.2d 872, 169

USPQ 759 (2nd Cir. 1971).

The cooperation between elements can also be expressed by describing how the element functions within the operative framework of the whole invention. *See In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

Here, claims 1 through 16 have the necessary cooperation. For the examiner's convenience, the exemplary cooperation is recited as follows, but not limited thereto:

the cooperation between a first temperature sensor and at least one chamber is found at "A first temperature sensor arranged to sense a temperature of the chamber";

the cooperation between a second temperature sensor and at least one chamber is found at "a second temperature sensor...to sense an inner temperature of the chamber";

the cooperation between a temperature adjuster and at least one chamber is found at "a temperature adjuster adjusting the inner temperature of the chamber"; and

the cooperation between a controller and the temperature adjuster is found at "a controller controlling the temperature adjuster"; and

the cooperation between a controller and first and second temperature sensors is found at "a controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within a predetermined temperature range of the chamber and the temperature sensed by the second temperature sensor is not within the predetermined temperature range of the chamber."



The cooperation between elements in claims 1 through 16 is expressed by properly describing how the element functions within the operative framework of the whole invention or by a mechanical interaction.

Withdrawal of the rejection is respectfully requested.

## II. Claim Rejection - 35 U.S.C. §102

Claims 1 through 5, 7 through 12, 15 and 16 stand rejected under 35 U.S.C. §102 as being anticipated by Woo '599.

The examiner argued that Woo discloses a refrigerator essentially as claimed, including at least one chamber 3A, a first temperature sensor SEN 2 and a second temperature sensor SEN 1, a temperature adjuster including a refrigeration system and a heater 9, and controller as depicted schematically in Figure 7.

In *Verdegaal Bros.*, the Court held that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (*Verdegaal Bros v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)).

In claim 1, a first temperature sensor senses a temperature of the chamber, and a second temperature sensor senses an inner temperature of the chamber.

That is, the first temperature sensor and the second temperature sensor must be arranged in a way to perform a designated function. (See *supra Innova/Pure Water Inc.*, 381

F.3d at 1117-20, 72 USPQ2d at 1006-08 (Fed. Cir. 2004)). In other words, the arrangement of the first temperature sensor and the second temperature should be interpreted, considering the designated function. In view of the holding of *Innova/Pure Water Inc.*, the claimed inventions are structurally distinguishable from Woo '592.

First, Woo '599 does not describe the first temperature sensor. In Woo '599, SEN2 is for sensing the temperature of the heater rather than a temperature of the chamber. The arrangement of SEN2 in Woo is different from the arrangement to perform sensing the temperature of the chamber as recited in claims 1 through 16 because the temperature of the heater and the temperature of the chamber are not equivalent to each other. Because SEN2 of Woo '599 is for preventing the heater from overheating (see col.10, lines. 58-63), there is no suggestion or modification to modify SEN 2 to sense the temperature of the chamber.

Second, Woo '599 does not describe the controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within a predetermined temperature range of the chamber and the temperature sensed by the second temperature sensor is not within the predetermined temperature range of the chamber. Woo '599 discloses that the temperature adjuster is controlled on the basis of a kimchi load calculated from a difference between a peripheral temperature of the heater and an internal temperature of the kimchi seasoning chamber (see col. 2, lines 41-44 and col. 4, lines 60-68) and/or that the temperature adjuster is controlled only on the basis of an internal temperature of the kimchi seasoning chamber, which is sensed only by SEN 1, after the seasoning of the kimchi (see

col. 2, lines 47-52). The controller of Woo '599 (controlling the temperature based on the difference between a peripheral temperature of the heater and an internal temperature of the heater) is not equivalent to the controller of claim 1 of the present invention. Likewise, the controller recited in claims 8 through 12 are not disclosed in Woo '599.

Therefore, the examiner fails to show that each and every element as set forth in the claims 1 through 16 is found in Woo '959.

Withdrawal of the rejection is respectfully requested.

A fee of \$100.00 is incurred by adding two dependent claims in excess of total 20 claims. Applicant's check drawn to the order of Commissioner accompanies this Amendment. Should the check become lost, be deficient in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

In view of the above, it is submitted that all of the claims now present in the application are patentable over the cited references, taken either alone or combination and accordingly should now be in a condition suitable for allowance.

Respectfully submitted,

---

Robert E. Bushnell,  
Attorney for the Applicant  
Registration No.: 27,774

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Folio: P56993  
Date: 12/21/05  
I.D.: REB/JHP



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,558	12/04/2003	Sung-Ho Cho	P56993	5489

7590  
03/02/2006  
Robert E. Bushnell  
Suite 300  
1522 K Street, N.W.  
Washington, DC 20005

MAR - 3 2006

fw

Non - comp. AM  
Response Due:  
2 April 2006

EXAMINER

CIRIC, LJILJANA V

ART UNIT PAPER NUMBER

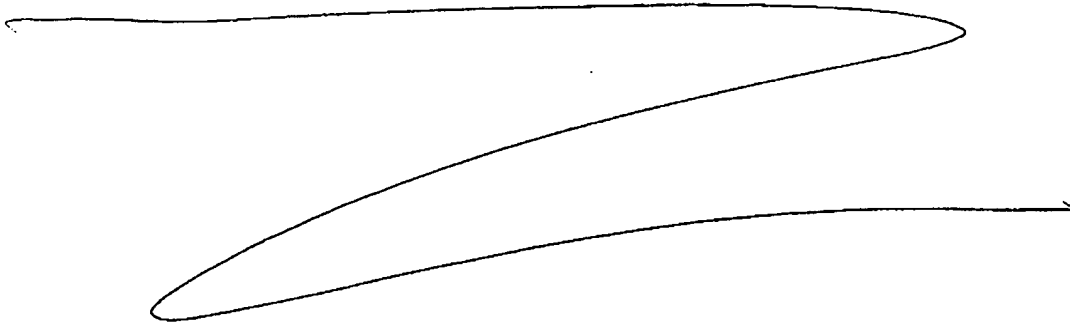
3753

DATE MAILED: 03/02/2006

COPY

Please find below and/or attached an Office communication concerning this application or proceeding.

Continuation of 2(b) Other: The amendment to the abstract does NOT properly show the changes made relative to the immediately previous version of the abstract, namely the version of the abstract as amended via the preliminary amendment filed on 4 December 2003. In particular, the abstract as amended via the preliminary amendment states "a temperature inside the chamber" in line 2 of the abstract, whereas the currently proposed amendment to the abstract states "an temperature inside the chamber", which corresponds to the abstract as originally filed prior to entry of the preliminary amendment.



Part of Paper No. 022  
Page 202



UNITED STATES DEPARTMENT OF COMMERCE  
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Alexandria, Virginia 22313-1450



APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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10/726,552 12/04/2003 CHO

756993

EXAMINER

CIRIC

COPY

ART UNIT

PAPER

3753

02282006

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner can normally be reached on Mondays through Fridays from 10:00 a.m. to 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene, can be reached at 571-272-4930.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Ljiljana V. Ciric*

Ljiljana (Lil) V. Ciric  
Primary Examiner  
Art Unit: 3753

**Notice of Non-Compliant  
Amendment (37 CFR 1.121)**

Application No.

10/726,552

Examiner

Ljiljana (Lil) V. Cincovic

Applicant(s)

CHO ET AL.

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

The amendment document filed on 21 December 2005 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
- ☐ A. Amended paragraph(s) do not include markings.
  - ☐ B. New paragraph(s) should not be underlined.
  - ☐ C. Other \_\_\_\_\_.
- ☒ 2. Abstract:
- ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
  - ☒ B. Other See Continuation Sheet.
- ☐ 3. Amendments to the drawings:
- ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
  - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
  - ☐ C. Other \_\_\_\_\_.
- ☐ 4. Amendments to the claims:
- ☐ A. A complete listing of all of the claims is not present.
  - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
  - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
  - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
  - ☐ E. Other: \_\_\_\_\_.
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4): \_\_\_\_\_

COPY

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

**TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:**

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment or an amendment filed after allowance. If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a *Quayle* action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

**Extensions of time** are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

**Failure to timely respond** to this notice will result in:

**Abandonment** of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or

**Non-entry** of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

*LV Cincovic*  
Legal Instruments Examiner (LIE), if applicable PRIMARY EXAMINER

571-272-4909  
Telephone No.





COPY

**P56993**

**7 March 2006**

Applicant: SUNG-HO CHO *et al.*  
Serial No.: 10/726,552  
Filed: 4 December 2003  
For: *REFRIGERATOR AND CONTROL METHOD THEREOF*

Document filed:

- ☒ Corrected Amendment in response to the Notice of Non-compliant Amendment (Paper No. 02282006) mailed on 2 March 2006.





PATENT  
P56993

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SUNG-HO CHO *et al.*

COPY

Serial No.: 10/726,552

Examiner: CIRIC, LJILJANA V

Filed: December 4, 2003

Art Unit: 3753

For: REFRIGERATOR AND CONTROL METHOD THEREOF

**CORRECTED AMENDMENT**

Mail Stop: Amendment  
Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Notice of Non-Compliant Amendment mailed on 2 March 2006  
(Paper No. 02282006), entry of the following amendments and/or remarks, re-examination  
and reconsideration, are respectfully requested.

Folio: P56993  
Date: 3/7/06  
I.D.: REB/JHP/ny/fw

**AMENDMENT IN THE ABSTRACT**

Please amend the Abstract as follows:

~~Disclosed is a~~ A refrigerator ~~comprising~~ has at least one chamber, ~~[[and]]~~ a temperature adjuster adjusting a temperature inside the chamber, ~~further comprising~~ a first temperature sensor approximately sensing the temperature inside the chamber, a second temperature sensor spaced from the first temperature sensor so as to sense the real temperature inside the chamber~~[[;]]~~, and a controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within predetermined temperature limits of the chamber and the temperature sensed by the second temperature sensor is not. With this configuration, the temperature inside the chamber is effectively controlled by an accurate and prompt sensing operation. Though one of the first and second temperature sensors is abnormal, it is possible to replace or repair the abnormal temperature sensor, or to control the temperature adjuster by the other normal temperature sensor.

**AMENDMENT IN THE CLAIMS**

Please amend claim 1 and add claims 31 thru 36 to read as follows.

1           1. (Currently Amended) A refrigerator comprising:  
2           at least one chamber;  
3           a first temperature sensor arranged to sense sensing a temperature of the chamber;  
4           a second temperature sensor spaced from the first temperature sensor to sense an inner  
5           temperature of the chamber;  
6           a temperature adjuster adjusting the inner temperature of the chamber; and  
7           a controller controlling the temperature adjuster according to the temperature sensed  
8           by the second temperature sensor when the temperature sensed by the first temperature  
9           sensor is within a predetermined temperature range of the chamber and the temperature  
10          sensed by the second temperature sensor is not within the predetermined temperature range  
11          of the chamber.

1           2. (Previously Presented) The refrigerator according to claim 1, wherein the first and  
2           second temperature sensors are installed at lower and upper parts of the chamber,  
3           respectively; and  
4           the controller is programmed with said predetermined temperature range, said  
5           predetermined temperature range comprising a first temperature range and a second  
6           temperature range to be compared with the temperatures sensed by the first and second

7 temperature sensors, respectively.

1 3. (Original) The refrigerator according to claim 1, wherein one of the first and  
2 second temperature sensors is removably installed.

1 4. (Original) The refrigerator according to claim 2, wherein one of the first and  
2 second temperature sensors is removably installed.

1 5. (Original) The refrigerator according to claim 3, wherein the first temperature  
2 sensor is in contact with the bottom surface of the chamber and senses the temperature of the  
3 surface of the chamber; and  
4 the second temperature sensor is installed at the upper part of the chamber and senses  
5 the inner temperature of the chamber.

1 6. (Previously Presented) The refrigerator according to claim 5, further comprising  
2 a sensor accommodating part accommodating the second temperature sensor, and a sensor  
3 cover opening and closing the sensor accommodating part.

1 7. (Previously Presented) The refrigerator according to claim 2, wherein the first and  
2 second temperature ranges are different from each other.

1           8. (Previously Presented) The refrigerator according to claim 7, wherein the  
2     controller determines whether the temperature sensed by the first temperature sensor is  
3     within the first temperature range, if the temperature sensed by the second temperature  
4     sensor is within the second temperature range, to thereby control the temperature adjuster.

1           9. (Previously Presented) The refrigerator according to claim 8, wherein the  
2     controller controls the temperature adjuster to allow the temperature sensed by the second  
3     temperature sensor to be within the second temperature range if the temperature sensed by  
4     the second temperature sensor is not within the second temperature range, and determines  
5     whether or not the temperature sensed by the first temperature sensor is within the first  
6     temperature range, if the temperature sensed by the second temperature sensor is within the  
7     second temperature range, to thereby control the temperature adjuster.

1           10.(Previously Presented) The refrigerator according to claim 7, wherein the  
2     controller controls the temperature adjuster until the temperature sensed by the second  
3     temperature sensor is within the second temperature range, and then determines whether or  
4     not the temperature sensed by the first temperature sensor is within the first temperature  
5     range, to thereby control the temperature adjuster.

1           11.(Previously Presented) The refrigerator according to claim 10, wherein the  
2     controller controls the temperature adjuster to allow the temperature sensed by the second

3 temperature sensor to be within the second temperature range, if the temperature sensed by  
4 the second temperature sensor is not within the second temperature range, and determines  
5 whether or not the temperature sensed by the first temperature sensor is within the first  
6 temperature range, if the temperature sensed by the second temperature sensor is within the  
7 second temperature range, to thereby control the temperature adjuster.

1 12.(Previously Presented) The refrigerator according to claim 10, wherein the  
2 controller controls the temperature adjuster until the temperature sensed by the second  
3 temperature sensor is within the second temperature range, and then determines whether or  
4 not the temperature sensed by the first temperature sensor is within the first temperature  
5 range, to thereby control the temperature adjuster.

1 13. (Original) The refrigerator according to claim 6, further comprising first and  
2 second sensor indicators indicating operating states of the first and second temperature  
3 sensors; and

4 wherein the controller controls the operating states of the first and second temperature  
5 sensors.

1 14.(Previously Presented) The refrigerator according to claim 13, wherein where one  
2 of the first and second temperature sensors is determined to be abnormal and the other of the  
3 first and second temperature sensors is determined to be normal, the controller allows the

4 sensor indicator corresponding to the abnormal sensor to indicate abnormality and  
5 determines whether or not the temperature sensed by the normal temperature sensor is within  
6 the temperature range of the normal temperature sensor, to thereby control the temperature  
7 adjuster.

1 15. (Original) The refrigerator according to claim 10, wherein where both the first  
2 and second temperature sensors are out of order, the controller allows both the first and  
3 second sensor indicators to indicate the abnormalities of both the first and second  
4 temperature sensors, and suspends the operation of the temperature adjuster.

1 16. (Original) The refrigerator according to claim 1, wherein the temperature adjuster  
2 comprises:

3 a cooling system cooling the chamber with a compressor, a condenser, an evaporator  
4 and a valve which circulate a refrigerant; and  
5 a heater heating the chamber.

1 17-30. (Canceled)

1 31. (New) A refrigerator comprising:

2 at least one chamber;

3 a first temperature sensor being in contact with the bottom surface of the chamber to



4 sense the temperature of the surface of the chamber;

5 a second temperature sensor spaced from the first temperature sensor to sense an inner  
6 temperature of the chamber;

7 a temperature adjuster adjusting the inner temperature of the chamber; and

8 a controller controlling the temperature adjuster according to the temperature sensed  
9 by the second temperature sensor when the temperature sensed by the first temperature  
10 sensor is within a predetermined temperature range of the chamber and the temperature  
11 sensed by the second temperature sensor is not within the predetermined temperature range  
12 of the chamber.

1 32. (New) The refrigerator according to claim 31, further comprising a sensor  
2 accommodating part accommodating the second temperature sensor, and a sensor cover  
3 opening and closing the sensor accommodating part.

1 33. (New) A refrigerator comprising:  
2 at least one chamber;  
3 a first temperature sensor arranged to sense a temperature of a surface of the chamber;  
4 a second temperature sensor spaced from the first temperature sensor to sense an inner  
5 temperature of the chamber;  
6 a temperature adjuster adjusting the inner temperature of the chamber; and  
7 a controller being programmed with a first predetermined temperature range and a

8 second predetermined temperature range, the controller controlling the temperature adjuster  
9 based on a determination of whether the temperature sensed by the first temperature sensor  
10 is within said first predetermined temperature range and whether the temperature sensed by  
11 the second temperature sensor is within said second predetermined temperature range.

1 34. (New) The refrigerator according to claim 33, wherein the controller controls said  
2 temperature adjuster based on the temperature sensed by the second temperature sensor until  
3 the temperature sensed by the second temperature sensor is within said second predetermined  
4 temperature range, and, once said temperature sensed by the second temperature sensor is  
5 within said second predetermined temperature range, the controller controls said temperature  
6 adjuster based on said temperature sensed by the first temperature sensor until said  
7 temperature sensed by the first temperature sensor is within said first predetermined  
8 temperature range.

1 35. (New) The refrigerator according to claim 33, wherein the temperature adjuster  
2 comprises a cooling system to cool the chamber and a heater to heat the chamber, and  
3 if the temperature sensed by the second temperature sensor is not within said second  
4 predetermined temperature range, the controller turns off said cooler and turns on said heater  
5 when the temperature sensed by the second temperature sensor is lower than said second  
6 predetermined temperature range, and turns on said cooler and turns off said heater when the  
7 temperature sensed by the second temperature sensor is higher than said second

8 predetermined temperature range, and if the temperature sensed by the second temperature  
9 sensor is within said second predetermined temperature range, the controller turns off said  
10 cooler and turns on said heater when the temperature sensed by the first temperature sensor  
11 is lower than said first predetermined temperature range, and turns on said cooler and turns  
12 off said heater when the temperature sensed by the first temperature sensor is higher than  
13 said first predetermined temperature range.

1 36. (New) The refrigerator according to claim 35, further comprising a sensor  
2 accommodating part accommodating the second temperature sensor, and a sensor cover  
3 opening and closing the sensor accommodating part.

**REMARKS**

This is a Corrected Amendment in response to the Notice of Non-Compliant Amendment (Paper No. 02282006) mailed on 2 March 2006. Applicant has now properly shown the changes made relative to the immediately previous version of the abstract, namely the version of the abstract as amended via the Preliminary Amendment filed on 4 December 2003. In particular, the abstract in this Corrected Amendment shows the amendment made via the Preliminary Amendment in line 2 of the abstract as "a temperature inside the chamber", instead of "an temperature inside the chamber." No new matter is inserted in this Amendment.

This amendment is in response to the first Office action mailed on 22 September 2005 (Paper No. 09192005).

In response to the examiner's objection to the abstract, the abstract has been corrected. Withdrawal of the objection is respectfully requested.

Claims 1 through 16 are pending in this application. Claim 1 has been amended, and claims 31 through 36 are newly added. No new matter has been added.

**I. Claim Rejection - 35 U.S.C. §112**

(1) Claims 1 through 16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner argued that it is not clear whether the corresponding functional language limitations in base claim 1 (i.e., "sensing a temperature of the chamber" in lines 4-5 of the claim; "controlling the temperature adjuster according to..." in lines 9-12 of the claim) are intended to merely recite the intended use of the first temperature sensor and of the controller or whether these are intended to recite method steps in an apparatus claim or whether these are intended to invoke 35 U.S.C. 112, sixth paragraph without using means-plus-function language, for example, thus rendering indefinite the metes and bounds of protection sought by base claim 1 and all claims depending therefrom.

The examiner's rejection is not proper for the following reasons.

First, claims 1 through 16 are directed neither to "intended use" nor "method steps in an apparatus claim."

MPEP 2173.05(g) states that:

A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. **Functional language does not, in and of itself, render a claim improper.** *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. **A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step. (Emphasis added.)**

The law clearly permits the applicant to define an element by what it does. Also, the law clearly permits a functional limitation to be used in association with an element to define a particular capability or purpose that is served by the recited element.

In view of the above holdings, there is no improper functional limitation in claim 1. Furthermore, "sensing a temperature of the chamber" in claim 1 has been amended to "arranged to sense a temperature of the chamber."

Second, the languages in claims 1 through 16 do not invoke 35 U.S.C. 112, sixth paragraph.

MPEP §2181 states that:

A claim limitation will be interpreted to invoke 35 U.S.C. 112, sixth paragraph, if it meets the following 3-prong analysis:

- (A) the claim limitations must use the phrase "means for" or "step for";
- (B) the "means for" or "step for" must be modified by functional language; and
- (C) the phrase "means for" or "step for" must not be modified by sufficient structure, material or acts for achieving the specified function.

With respect to the first prong of this analysis, a claim element that does not include the phrase "means for" or "step for" will not be considered to invoke 35

U.S.C. 112, sixth paragraph.

Here, since claim 1 properly defines the first temperature sensor and the controller by what they do, and claim 1 does not include the phrase "means for" or "step for," the claim limitations should not be interpreted to invoke 35 U.S.C. 112, sixth paragraph.

Therefore, claims 1 through 16 are not amiss under 35 U.S.C. 112, second paragraph.

(2) Claims 1 through 16 stand rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections.

The examiner argued that the omitted structural cooperative relationships are, for example: the ones between the at least one chamber and each of the first and second temperature sensors; the ones between the temperature adjuster, the at least one chamber, and the controller; and, the ones between the controller and each of the first sensor and the second sensor.

In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004), the court noted that the claim term "operatively connected" is "a general descriptive claim term frequently used in patent drafting to reflect a functional relationship between claimed components," that is, the term "means the claimed components must be connected in a way to perform a designated

function." "In the absence of modifiers, general descriptive terms are typically construed as having their full meaning." *Id.* at 1118, 72 USPQ2d at 1006. In the patent claim at issue, "subject to any clear and unmistakable disavowal of claim scope, the term 'operatively connected' takes the full breath of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." *Id.* at 1120, 72 USPQ2d at 1008.

The necessary cooperation need not be a "direct mechanical interaction"; the elements can function independently "so long as the overall result is patentable." See *In re Gustafson*, 331 F.2d 905, 141 USPQ 585 (CCPA 1964); *Ancol Co. V. Uniroyal, Inc.*, 448 F.2d 872, 169 USPQ 759 (2nd Cir. 1971).

The cooperation between elements can also be expressed by describing how the element functions within the operative framework of the whole invention. See *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

Here, claims 1 through 16 have the necessary cooperation. For the examiner's convenience, the exemplary cooperation is recited as follows, but not limited thereto:

the cooperation between a first temperature sensor and at least one chamber is found at "A first temperature sensor arranged to sense a temperature of the chamber";

the cooperation between a second temperature sensor and at least one chamber is found at "a second temperature sensor...to sense an inner temperature of the chamber";

the cooperation between a temperature adjuster and at least one chamber is found at



"a temperature adjuster adjusting the inner temperature of the chamber"; and

the cooperation between a controller and the temperature adjuster is found at "a controller controlling the temperature adjuster"; and

the cooperation between a controller and first and second temperature sensors is found at "a controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within a predetermined temperature range of the chamber and the temperature sensed by the second temperature sensor is not within the predetermined temperature range of the chamber."

The cooperation between elements in claims 1 through 16 is expressed by properly describing how the element functions within the operative framework of the whole invention or by a mechanical interaction.

Withdrawal of the rejection is respectfully requested.

## **II. Claim Rejection - 35 U.S.C. §102**

Claims 1 through 5, 7 through 12, 15 and 16 stand rejected under 35 U.S.C. §102 as being anticipated by Woo '599.

The examiner argued that Woo discloses a refrigerator essentially as claimed, including at least one chamber 3A, a first temperature sensor SEN 2 and a second temperature sensor SEN 1, a temperature adjuster including a refrigeration system and a

heater 9, and controller as depicted schematically in Figure 7.

In *Verdegaal Bros.*, the Court held that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” (*Verdegaal Bros v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)).

In claim 1, a first temperature sensor senses a temperature of the chamber, and a second temperature sensor senses an inner temperature of the chamber.

That is, the first temperature sensor and the second temperature sensor must be arranged in a way to perform a designated function. (See supra *Innova/Pure Water Inc.*, 381 F.3d at 1117-20, 72 USPQ2d at 1006-08 (Fed. Cir. 2004)). In other words, the arrangement of the first temperature sensor and the second temperature should be interpreted, considering the designated function. In view of the holding of *Innova/Pure Water Inc.*, the claimed inventions are structurally distinguishable from Woo ‘592.

First, Woo ‘599 does not describe the first temperature sensor. In Woo ‘599, SEN2 is for sensing the temperature of the heater rather than a temperature of the chamber. The arrangement of SEN2 in Woo is different from the arrangement to perform sensing the temperature of the chamber as recited in claims 1 through 16 because the temperature of the heater and the temperature of the chamber are not equivalent to each other. Because SEN2 of Woo ‘599 is for preventing the heater from overheating (see col.10, lines. 58-63), there is no suggestion or modification to modify SEN 2 to sense the temperature of the chamber.

Second, Woo '599 does not describe the controller controlling the temperature adjuster according to the temperature sensed by the second temperature sensor when the temperature sensed by the first temperature sensor is within a predetermined temperature range of the chamber and the temperature sensed by the second temperature sensor is not within the predetermined temperature range of the chamber. Woo '599 discloses that the temperature adjuster is controlled on the basis of a kimchi load calculated from a difference between a peripheral temperature of the heater and an internal temperature of the kimchi seasoning chamber (*see* col. 2, lines 41-44 and col. 4, lines 60-68) and/or that the temperature adjuster is controlled only on the basis of an internal temperature of the kimchi seasoning chamber, which is sensed only by SEN 1, after the seasoning of the kimchi (*see* col. 2, lines 47-52). The controller of Woo '599 (controlling the temperature based on the difference between a peripheral temperature of the heater and an internal temperature of the heater) is not equivalent to the controller of claim 1 of the present invention. Likewise, the controller recited in claims 8 through 12 are not disclosed in Woo '599.

Therefore, the examiner fails to show that each and every element as set forth in the claims 1 through 16 is found in Woo '959.

Withdrawal of the rejection is respectfully requested.

A fee of \$100.00 is incurred by adding two dependent claims in excess of total 20 claims. Applicant's check drawn to the order of Commissioner accompanies this

Amendment. Should the check become lost, be deficient in payment, or should other fees be incurred, the Commissioner is authorized to charge Deposit Account No. 02-4943 of Applicant's undersigned attorney in the amount of such fees.

In view of the above, it is submitted that all of the claims now present in the application are patentable over the cited references, taken either alone or combination and accordingly should now be in a condition suitable for allowance.

Respectfully submitted,

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